

## A WAGON PROVIDED FOR THE PURPOSE:

### Procurement and Supply in the Philadelphia District

On 18 January 1778, while encamped at Valley Forge, Brigadier General and Chief Engineer Louis le Bégue du Portail prepared a memorial for his commander-in-chief. In addition to recommendations on fortification procedures and on the establishment of three companies of sappers, du Portail noted that engineers needed tools to work and must be trained to take proper care of them. *"Each company,"* he remarked, *"should always have its tools with it, carried in a wagon provided for the purpose — the company should be answerable for all tools lost, and in case any should be broke, the pieces are to be produced to the officer to whom the detail of the Company is committed."*<sup>1</sup> This first written statement of the engineer's concern for his tools and equipment was a small beginning for what was to become, by the end of the Second World War, a multi-million dollar program.



*Colonel Jonathan Williams. —Library of Congress*

The next incident in the chronicle of supply activities performed by Army Engineers in the Philadelphia area, involved the appointment of Engineer Major Jonathan Williams to the position of Purveyor of Public Supplies under the Secretary of the Treasury, on 28 April 1800, a position which he occupied until 23 May of that year. In that position he was directed:

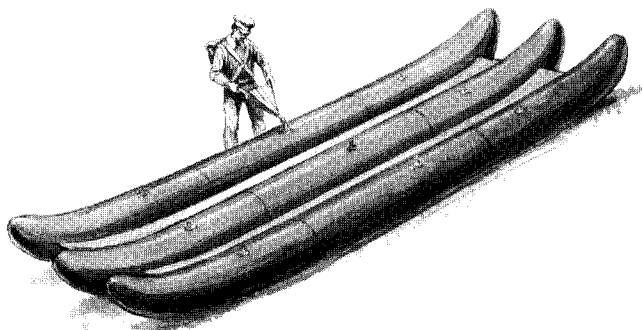
*to conduct the procuring and providing of all arms, military and naval stores, provisions, clothing, Indian goods, and generally all articles of supply requisite for the service of the United States.*

On 16 February 1801, President Adams appointed Williams a major in the Second Regiment of Artillerists and Engineers;

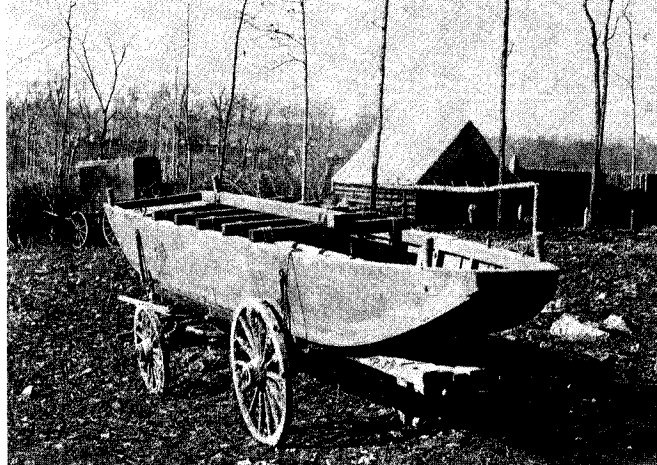


*Provision Train for General Washington, engr. by C. Tomkins  
after Imogene Robinson, 1877.*

*—Library of Congress*



*India rubber Ponton boat, circa 1848.*



*Ponton boat and wagon, 50th N.Y. Engineers, Rappahannock Station, Va. March 1864.*

*—Library of Congress*

shortly thereafter, President Jefferson made him inspector of fortifications, and on 13 April 1802, the Chief of the new Corps of Engineers, and first Superintendent of the Military Academy at West Point.<sup>2</sup>

Until 1866 there is no record of military supply or procurement being handled in any way other than through the Chief's Office in Washington. Engineer supplies included bridge and road building tools and were transported by Engineer troops as part of an "engineer train" of equipment. In the Mexican War, this

equipment included "an India Rubber Ponton Bridge," and a large number of pack mules. After the capture of Mexico City, the Engineers sold their tools, which according to Lieutenant Gustavus W. Smith, "brought more than they had originally cost in the United States."<sup>3</sup> Through the Civil War, it is reported that General Totten, Chief Engineer, was personally involved in Engineer Procurement and Supply, and it was only after his death in 1864 that the Corps Military Supply Program, such as it was, began to be decentralized.



*U.S. Engineer Supply Train under cavalry attack in Mexican War.*

*—National Archives*

*Galvanized iron barrels being stacked at the Philadelphia Quartermaster Depot, 1919.*

*—National Archives*



No real information has surfaced about Engineer procurement and military supply in the Philadelphia District before this nation's entry into the First World War. That conflict saw the establishment of a first Engineer procurement depot in the city, although on a far more restricted scale (as will be shown) than the Corps and the officer assigned to the post originally envisaged. The war, despite the patriotic fervor with which this country entered into it, caught the nation's industrial war machine unawares. Between 6 April 1917, when war was declared, and the armistice of 11 November 1918, an industrial juggernaut was hewn out of the living rock of American ingenuity, and sent on its inexorable way to France. At first chaos reigned; four different chiefs of staff followed hard upon each other and in the procurement branches, several general officers were relieved of command. The rising cost of war materiel staggered the various supply services (nominally united in Europe under the acronym S.O.S., Services of Supply). Between September 1917 and September 1918, six different mobilization plans were delivered to the different procurement branches. The War of 1812 had seen a rise in wholesale commodity prices from an index figure of 175 to 250, or 43 percent; in the Civil War they rose from 100 to 180 or 80 percent; but during World War I the increase was from 100 to 240 or a staggering 140 percent. Fifteen billion dollars were spent to prosecute the war.<sup>4</sup> Item costs skyrocketed. The harness, pack, and saddle equipment purchased by the Quartermaster Corps and worth sixty million dollars at the time of purchase, ultimately cost over three hundred millions.

The Services of Supply (S.O.S.) was the general rubric for coordinating the multiple supply and procurement agencies of the American Expeditionary Forces — including the Quartermaster Corps; the Ordnance Department; the Signal Corps; the Corps of Engineers; the Air Service; the Medical Department; and the Chemical Warfare (Gas) Service.

The following list briefly enumerates the materials procured by each branch:

*Items Procured by the Supply Branches<sup>5</sup>*

*Quartermaster Corps:*

- Subsistence and forage
- Clothing and equipage
- Fuel, oil, paints, and chemicals
- Vehicles, harness, and saddlery
- Hardware, stones, tools, furniture, mess equipment, cordage
- Construction materials
- Motor vehicles
- Marine Equipment
- Horses and Mules
- Shoe, hat, and clothing repair machinery, laundry and printing equipment

*Ordnance Department*

- Machine guns, rifles, and pistols
- Artillery
- Fire Control Instruments
- Ammunition of all kinds
- Special Motor Vehicles
- Target Material
- Grenades, pyrotechnics

*Signal Corps*

- Wire and cables
- Radio Equipment
- Batteries

*View of Engineer Supply Depot. Menil La Tour, Meurthe et Moselle, France.*

—National Archives



Telephone and telegraphic material  
Photographic and meteorological equipment  
Pigeons

#### *Air Service*

Airplanes, engines therefor  
Balloons  
Engines  
Bombs  
Special clothing  
Special trucks  
Special woods  
Special metals  
Airplane dope and chemicals  
Lubricants  
Aerial signaling apparatus  
Aerial photographic apparatus  
Aircraft armament

#### *Medical Department*

Drugs, chemicals, and reagents  
Surgical, dental, and veterinary instruments  
Laboratory supplies  
X-ray apparatus and supplies  
Field hospital supplies and dressings  
Hospital furniture

#### *Chemical War Service:*

Chemicals  
War gases and their containers  
Smokes  
Incendiaries  
Gas defense equipment  
Chemical engineering equipment

#### *Corps of Engineers:*

Surveying equipment  
Lithographic equipment  
Searchlights  
Bridge materials  
Railroad rolling stock  
Railroad shops  
Lumber for troops in field  
Water supply equipment

In France, there was continued conflict between the different branches, each zealously guarding its own territory while trying to encroach upon the precincts of the other branches. In fourteen months, eight changes were made in the Chief of the Engineer Supply section in France.

But compared to the Quartermaster Corps and the Ordnance Department, which during the war expended \$8,074,018,000 and \$4,087,347,000 respectively on military supply, the Corps of Engineers involvement was relatively modest. At the height of the War, the Quartermaster Corps shipped enough food each month to feed the entire American Expeditionary Force, in units of 25,000 men, for thirty days (with ninety days reserve cover).<sup>6</sup> Nevertheless, \$638,974,000 were spent, and over one and one half million tons of equipment shipped by the Engineers before the Armistice. The Engineers supplied the wants of their own men and furnished engineer equipment to all the other services, assisting particularly in the support of all construction undertaken in the theatre of operations. This included 4,400 miles of standard steel rails; 10,000 switches; 17,000 tons of accessory fastening; 100,000,000 square feet of sheet steel; 100,000,000 square feet of roofing; 25,000,000 feet of copper wire; 10,000,000 feet of pipe; and 115,000 miles of barbed wire. Engineer storage depots in France spread over 420 acres (20 acres covered; 400 acres uncovered).<sup>7</sup>

Back in the states, the Corps began to establish regional depots to feed the mighty military machine. By Armistice day, 394,000 officers and men of the Engineers were engaged in military supply, an increase from



*Engineers at camouflage work, Camp Leach, American University, Washington, D.C. Before coming to the Philadelphia District, Captain Kent taught at the Engineer Training Camp here.*

—National Archives

the peacetime 3,000 of 131 to 1. The Corps established major procurement branches in Birmingham, Alabama; Chicago, Illinois; New York, New York; Pittsburgh, Pennsylvania; and San Francisco, California.

On 11 June 1917, the Philadelphia District Engineer, Major J. C. Oakes, was directed by the Chief of Engineers to determine whether and where 300,000 square feet of storage space were “immediately obtainable in [the] vicinity of Philadelphia with possibility of expanding to a large depot with railroad and shipping facilities.” Major Oakes publicized the matter, sending letters of inquiry to the city’s major newspapers, including the *Record*, *Press*, *Inquirer*, *Public Ledger*, and *North American*. Replies poured in and were investigated each in turn — the offers ranged from open swamp-land along the Delaware to a proposal for refurbishing Fort Mifflin as a storage depot.<sup>8</sup>

On 13 August 1917, with the search for a facility in full swing, Captain James D. Kent, Engineer Reserve Officer Corps, was relieved from duty at the Engineer training camp, American University, Washington, D.C., and ordered to report to the Philadelphia District, there to assume command of the inchoate military supply program. On 4 September 1917, Captain Kent reported to District Headquarters at 815 Witherspoon Building in Philadelphia, to take charge of the search for a storage facility. He also contacted the Quartermaster Corps, to coordinate the deliveries of nuts, bolts, spikes, and slice bars that were to accompany rails the Engineers were shipping to France. The office would also disseminate public information about the Engineer Reserve, and recruit civilian em-

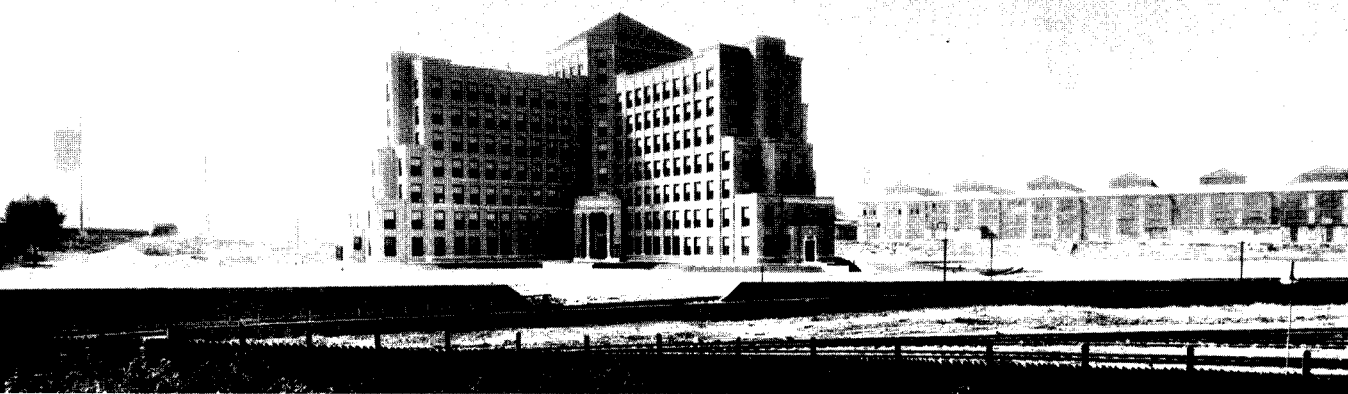
ployees for Engineer Regiments (over 100 were ultimately hired for the 33rd Engineers and other regiments).

In his search for a depot site, Captain Kent journeyed far afield. Learning on his arrival that “*the District officer here has carefully canvassed the situation and there is no covered storage facilities [sic] in Philadelphia immediately on [the] waterfront,*” he determined that a depot, if it could be provided,



*Major J. C. Oakes.*

would have to be some distance from the river, and would necessitate hauling overland by rail. Realizing that the District might soon be inundated by a flood of equipment moving through Philadelphia toward France, Kent sought to increase his mobility, and accordingly put in a \$2,100 requisition for an automobile, accompanying the requisition with the reminder that it was necessary for him “*to make frequent and hurried trips daily*



*The Baldwin Locomotive Works, Philadelphia. —Historical Society of Pennsylvania*

*to various part of the city, including points on the Delaware River front and Fort Mifflin, where there are no street car connections, and if Captain Kent is forced to walk long distances, he will be greatly handicapped and*

*his work cannot be conducted expeditiously or efficiently."*

Receipt of the following War Department letter on 20 September 1917 rendered Kent's search academic:

September 19, 1917

*Captain James D. Kent, U.S. Engr. Office, Witherspoon Bldg., Philadelphia  
Engineer Depot at Philadelphia*

*1. You are advised that the following situation exists with regard to the establishment of an Engineer Depot at Philadelphia.*

*2. Regular Engineer Depots have already been established at New York and Norfolk, with pier, storehouse, and open storage facilities either already existing or in process of construction, on a scale sufficient to handle the receipt, storage, and shipment of engineer material, equipment and supplies for an indefinite period in the future. Depot organizations have been formed at those two points where are now handling shipments.*

*3. It is not proposed to establish a regular depot at Philadelphia unless future conditions that cannot be foreseen at the present time renders this necessary. However, in connection with the very large initial purchase of locomotives, steel rail, frogs, switches, etc., it was considered advisable to use Philadelphia as a special shipping point. It is not anticipated that future orders for such railroad equipment will be of the same magnitude, and it is expected that they will be handled through the New York and Norfolk Depots, except in the case of locomotives furnished by the Baldwin Locomotive Company, which will probably be continued to be shipped through Philadelphia. Most of the steel rail and connections that are to be shipped through Philadelphia have already arrived there, and it is not expected to make further shipments of rail to that city. In case it should become necessary to do so, the Pennsylvania Railroad will be able to handle the storage of rails and connections (one copy of their letter to Mr. Felton enclosed herewith). The Reading Railroad should be able to handle locomotives and other heavy shipments.*

*4. Under the circumstances outlined above, it is not considered desirable at this time to acquire or construct piers, storehouses, or open storage yards, nor to build up a depot force beyond that absolutely necessary to handle shipments that are made in care of the Depot Quartermaster and render the necessary reports thereon, the present railway terminal facilities being used as at present.*

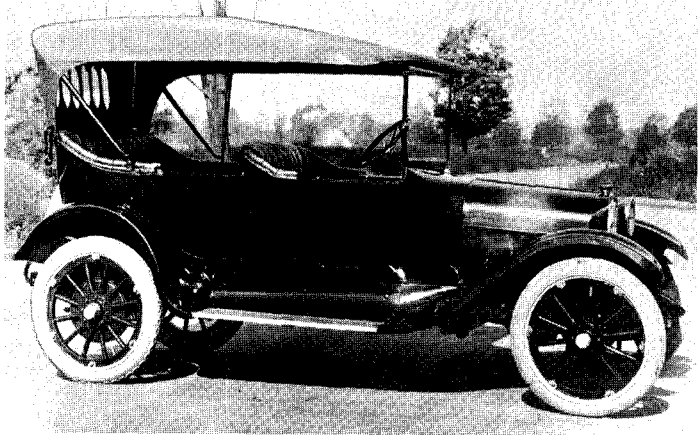
*5. I am forwarding your request of September 15th for authority to purchase an automobile at an estimated cost of \$2,100, to the Chief of Engineers, recommending approval for the purchase of a Dodge automobile, or equal, at a cost not to exceed \$1,000, for the reason that the Chief of Engineers has recently disapproved a similar request by the Depot Engineer Officer at Norfolk but has approved in lieu thereof the purchase of a Dodge car or equal at a cost not to exceed \$1,000.*

*6. I will hold your request of 15 September for the Inspectors until I hear further from you, in view of the explanation that has been made above.*

W. H. ROSE  
Major, Corps of Engineers

1918 Dodge Officers car.

—National Archives



At least Kent had his car — true, it was not the \$2,100 chariot he had requested, but a serviceable \$1,000 Dodge. Beyond that, Kent and his Engineer Depot No. 6 were left with a minimal force and the authority to ship rail-related equipment, most of which had already arrived in Philadelphia, in a program which was rapidly diminishing at its outset. By 1 January 1918, his monthly expenses had dropped to \$808.98, with \$809.72 in unexpended funds remaining. Every requisition had become a battle.

The Engineer depot functioned as an independent unit, outside the authority of the Philadelphia District Engineer, and relations between the two offices, through civil, were somewhat strained. On 5 March 1918 District Engineer L. D. Shuman informed Kent that

*"after this date this office cannot make payments for special drinking water for use in your office,"* unless Kent could establish that the regular tap water available to the depot was *"unwholesome or impure."* Kent replied on 15 March that *"there is no drinking water"* wholesome or unwholesome, *"supplied to the building for the use of the tenants."* Earlier that month, Shuman, a bit of a curmudgeon and quite a character in the history of the District (D.E. 1918-1920), had refused to honor a bill for a new tire for Kent's Dodge, which Kent had obtained from B. F. Goodrich on a trade-in. The incident is amusing enough in retrospect and enough of a bureaucratic paradigm in any case to warrant reproducing the Shuman memorandum in its entirety:

War Department  
UNITED STATES ENGINEER OFFICER  
Room 815 Witherspoon Building, 1321 Walnut Street  
Philadelphia, Pennsylvania

March 1, 1918

FROM: The District Engineer, Philadelphia, Pa.  
TO: The Officer in Charge, Engineer Depot No. 6, Philadelphia, Pa.  
SUBJECT: Bill of the B. F. Goodrich Rubber Company

1. Referring to the inclosed bill of the B. F. Goodrich Rubber Company for an automobile tire, it is the opinion of this office that the transaction as stated on the bill appears to be irregular and not in accordance with law.
2. The bill should show, on its face, the price allowed on the old tire taken in exchange as part payment for the new tire, if such was the case.
3. The depot is accountable on the property returns of this office for the old tire and it therefore cannot be disposed of excepting through condemnation by a duly appointed inspecting officer or a board of survey. The fact that it was traded in for a new tire does not relieve the depot from the accountability.
4. There exists no authority of law permitting the exchange or trading in of public property without the prior authority of the Secretary of War and it is suggested that such authority be obtained through proper channels in order that the transaction may appear regular and in accordance with law. It is also suggested that the Goodrich people be requested to submit a bill, in duplicate, as outlined in the 2nd paragraph.

L. D. SHUMAN

1 Inclosure





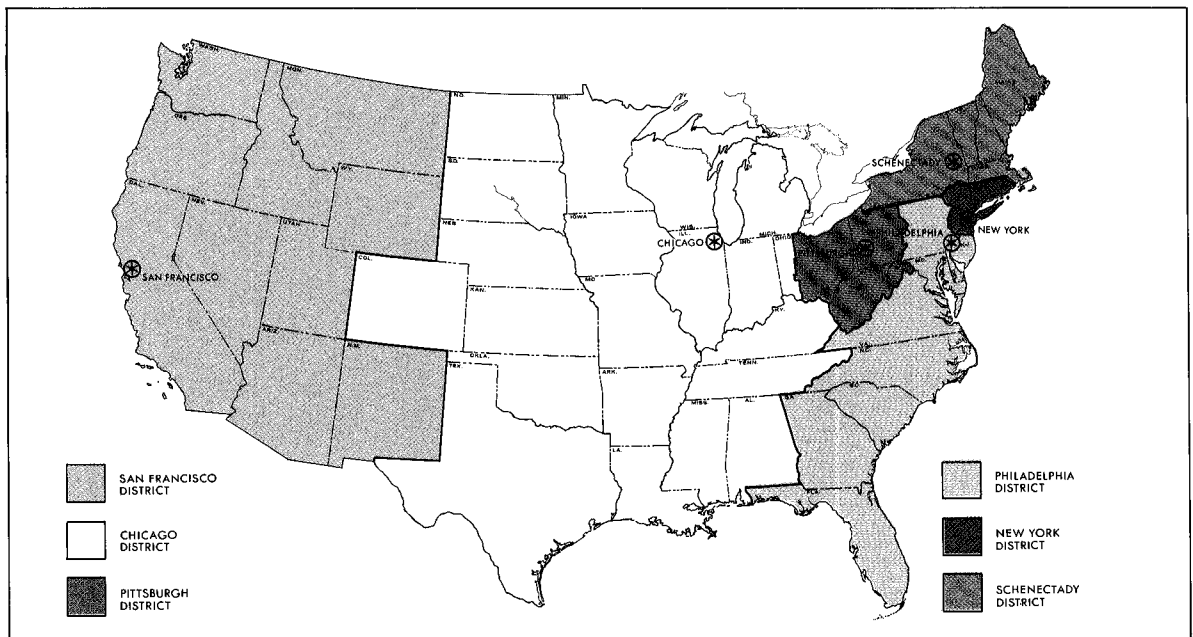
L. D. Shuman, District Engineer and Chief of Operations.

On 1 April 1918, Shuman noted that the Depot's monthly expenses were now up to \$1,045.07, including "*expenses . . . certified . . . by the Depot Engineer Officer,*" office expenses, public information expenses, and expenses incurred in restoring the barracks occupied by the 19th Railway Engineers to its former condition, after they were embarked. He noted that "*the Depot Engineer does not report to this office.*" He was uncomfortable with his position as disbursement officer for the Depot and complained in a letter to the Chief's office that "*while my relations with the Depot Engineer are cordial, the present arrangement is very unsatisfactory and will become more so as time goes on.*" O.C.E. took the hint, and after 1 May 1918, the Depot was funded independently from the District.

Armistice arrived on 11 November 1918. By 18 November, a halt was put on all contracts for motor vehicles and spare parts; military supply shifted direction and turned to expediting the cancellation of as many outstanding contracts as possible. Its purpose gone, the Military Supply Depot vanished.

In the general euphoria which followed the "War to end all wars," the military establishment languished. Total army strength fell to 190,000 men. The Engineer Corps' supply budget shrivelled from a wartime \$638 million to slightly over \$1-1/2 million in the first nineteen months of peace, a proportional drop of 426 to 1.<sup>9</sup>

Quite naturally, the War Department advised caution. The dazzling light of peace was blinding the country to the dangers of



Engineer Corps Procurement Districts, 1923



leaving itself "naked to its enemies." In 1923, industrial war plans were formulated, to protect and organize the nation's essential industries in the event of a future war.

On 4 January 1923, the Philadelphia District was notified of the impending visit on 19 January of the Assistant Secretary of War, accompanied by the Chief of Engineers, the Quartermaster General, the Assistant to the Chief of Ordnance, and their respective entourages. Out of their meetings emerged a plan to divide the United States, organization by organization, into emergency procurement districts. The Corps' plan provided for the division of the nation into *six* industrial procurement districts, headquartered in Schenectady; New York; Philadelphia; Pittsburgh; Chicago; and San Francisco, with central control located in Washington. The initial organization evolved as entirely a planning group, with no procurement function. In the event of mobilization, each District was to be responsible for the following territory:

#### ENGINEER CORPS PROCUREMENT DISTRICTS<sup>10</sup>

##### CHICAGO DISTRICT:

ALABAMA  
ARKANSAS  
COLORADO  
ILLINOIS  
INDIANA  
IOWA  
KANSAS  
KENTUCKY  
LOUISIANA  
MICHIGAN  
MINNESOTA  
MISSISSIPPI  
MISSOURI  
NEBRASKA

NORTH DAKOTA (Section west of Fulton,  
OHIO . . . . . Henry, Putnam, Allen,  
OKLAHOMA Auglaize, Shelby, Miami,  
SOUTH DAKOTA Montgomery, Warren, and  
TENNESSEE Clermont Counties  
TEXAS inclusive.)  
WISCONSIN

##### NEW YORK DISTRICT:

CONNECTICUT (Section north of Ocean  
and Burlington Counties,  
NEW JERSEY . . . . exclusive.)  
NEW YORK . . . . (Section south of Dutchess,  
Ulster, and Sullivan  
Counties inclusive.)  
RHODE ISLAND

##### PHILADELPHIA DISTRICT:

DELAWARE  
DISTRICT OF COLUMBIA  
FLORIDA  
GEORGIA  
MARYLAND (Section south of Ocean  
and Burlington Counties,  
NORTH CAROLINA inclusive.)  
NEW JERSEY . . . .

PENNSYLVANIA . (Section east of Fulton,  
Huntingdon, Center,  
SOUTH CAROLINA Clinton, and Potter  
VIRGINIA Counties exclusive.)

##### PITTSBURGH DISTRICT:

(Section east of Fulton,  
OHIO . . . . . Henry, Putnam, Miami,  
Allen, Auglaize, Shelby,  
Montgomery, Warren, and  
Clermont Counties,  
exclusive.)  
PENNSYLVANIA . (Section west of Fulton,  
Huntingdon, Center,  
Clinton, and Potter  
Counties inclusive.)  
WEST VIRGINIA



Colonel F. C. Boggs

SAN FRANCISCO DISTRICT:

ARIZONA  
CALIFORNIA  
IDAHO  
MONTANA  
NEW MEXICO  
NEVADA  
OREGON  
UTAH  
WASHINGTON  
WYOMING

SCHENECTADY DISTRICT:

MAINE  
MASSACHUSETTS  
NEW HAMPSHIRE  
NEW YORK . . . . . (Section north of Dutchess,  
VERMONT Ulster, and Sullivan  
Counties, exclusive.)

The Philadelphia District was chosen as a trial balloon to test the value of the project. The Chief's Office noted this in a letter to the District Engineer: *"This plan has not been put into operation as yet. Your office has been selected to make a trial thereof and if successful the plan will be extended to other District Offices."*

The Procurement District was organized into five branches: Reproduction equipment (purchase); Railway equipment (purchase); Electrical equipment (purchase); Bridge and miscellaneous equipment (purchase); and Inspection. Engineer Reserve Officers in the Philadelphia area were then contacted and transferred to the newly titled Branch Organization Group. Under the supervision of Colonel F. C. Boggs, the District Engineer, reserve officers were interviewed to determine their

qualifications, and how they might fit in with the new organization. The Chief's Office cautioned Colonel Boggs that in conducting his interviews he remember that:

*"In all probability this will be the first time the reserve officer has come into actual contact with post-war procurement planning. Emphasis should be laid on the importance of industrial mobilization in the next war and the vital necessity of making our pre-war plans as complete as possible. The selection and training of personnel is an important part of the plan and the enthusiastic aid and support of every reserve officer is desired. The training program is not extensive, due to lack of funds and due to the fact that these men are receiving the the greater part of their necessary training in the process of their business, but a step forward will be made if we can determine upon whom to call in an emergency. No officer will be called to active duty without his consent."*

In this way personnel could be trained and organized to function in an emergency with a minimum of that delay caused by individuals not being acquainted with their associates. When a reserve officer was recruited, he was asked to recommend other officers of his acquaintance, who might be suitable material for the group.

The Philadelphia Procurement Office, in conjunction with the procurement officers of other service branches in the city (e.g., the Quartermaster General), compiled a list of those companies in the area whose manu-

*Captain R. C. Kratz.*



factures were considered vital to the national security, should an emergency arise. The Corps was to deal specifically in procuring the same engineer items with which it had been entrusted in World War I.

By 1929, the Assistant District Engineer (in charge of disbursing property and contracts for the Engineer District) was also functioning as the Procurement District Executive Officer. He was assisted by one full-time civilian employee. Together they planned the procurement of engineer items by visiting local plants and preparing emergency contingency plans in cooperation with local suppliers. They also maintained contact with the approximately 300 Engineer Reserve Officers residing in the Eastern Pennsylvania Procurement District, through engineer correspondence and extension courses. These courses, in addition to offering an avenue of advancement for individual engineer officers, provided the District with a ready reserve of trained engineer personnel should they ever be needed. In the summer, this contact was personalized for the reserves by two weeks of active service.

In 1934, records show that the District was requested to assist in the procurement of "folding boats" for army river crossings. The District contacted the Philadelphia Boat Works, and arranged for the procuring of sample light-weight river craft, including "folding boats," wood boats covered with canvas, and aluminum vessels.

A War Department directive of February 1939 ordered the Regular Army Procurement District Executive Officer to consider the functions of that office as constituting his primary mission; it further recommended that

his other duties not be allowed to conflict with this primary task of training reserve officer personnel for the Procurement District.

September 1939 saw war come again to Europe. As Hitler's panzers swept through Poland, drawing the continent into the gathering maelstrom of a new World War, shock waves ran through the military establishments of half the world. In June 1940, a war game was held in the Philadelphia Office of the Corps of Engineers. Seventeen officers were on duty, assisted by five key civilian employees from the U.S. Engineer Office. War time conditions were assumed and the actual procurement of some items of Engineer requirements apportioned to this District was put into operation. Contracts and purchase orders were prepared and issued, inspection of materials made, materials shipped and vouchered for payment.<sup>11</sup> On 12 August 1940, a month after the war game was held, the dormant Philadelphia Engineer Procurement District was activated. The reserve officers, trained over a seventeen year period, were called to active service. Captain R. C. Kratz, a reserve officer, succeeded the District Executive Officer as Procurement Officer under the District Engineer.

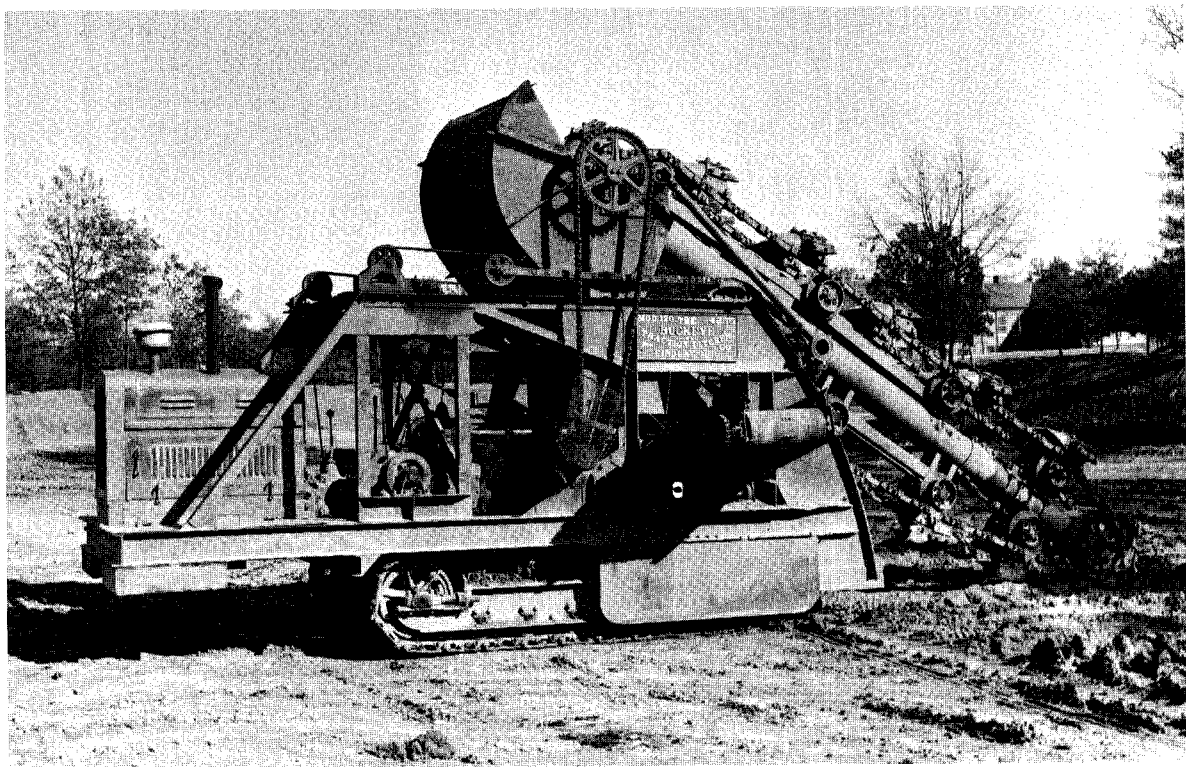
The Military Supply Program was inaugurated in November 1941. Its objective was to obtain materials and equipment commonly used by Engineer troops in this country and abroad. In addition, many other items were assigned by the Secretary of War for special procurement. Typical of the items procured under the program were — large pontons for bridges; small light-weight 12 man assault boats; refrigerator and meat

storage equipment; bulldozers, rollers, cranes, rock drillers, compressors, etc., used in Engineer road building operations; gasoline driven chain-saws for field use (these were used extensively on the Alcan Highway); all sandbags for the use of the Army, Navy, and Marine Corps, and huge quantities of camouflage netting. At first even insect powders used by the Army were procured, but this item later was transferred to the Quartermaster Corps. The Military Supply Program started off modestly enough, with the procurement in November 1941 of approximately \$50,000. By the end of the following month, this figure had tripled; by October 1942 the program had grown so large that \$11,000,000 were procured in that month alone. By December 1943, a rate of \$7,000,000 per month had been established,

which, though it fluctuated from month to month, remained relatively stable for the duration of the war. These costs included inspection and delivery expediting.

The territory of the Philadelphia Engineer Procurement District in the early days of the war comprised the eastern half of Pennsylvania, the southern half of New Jersey, all of Delaware, half of Maryland, and Virginia. Later, the boundary of the Military Supply Division was changed to conform to River and Harbor District boundaries.

During 1942, the District purchased, inspected and shipped such material and supplies as hardware, electric lighting equipment, bolts, nuts, nails, tool chests, and demolition kits, to the various Engineer Depots for stock distribution to troops both in this country



*Experimental traction ditch digger weighed 20,000 lbs. and made 18-inch cut.*

*—U.S. Army Photograph*



*Combination railroad and highway bridge, including newly built Bailey Bridge.*

*—U.S. Army Photograph*

and abroad. They also purchased tractor cranes, derricks, road building machinery, landing mats for overseas operations, and even purchased supplies for air raid wardens in the Eastern half of the country.

By the end of 1942, it was evident that the Procurement District needed too much help from regular District personnel to function efficiently. At first, District personnel were transferred to Procurement to alleviate the situation. Finally on 1 January 1943, the functions of the Philadelphia Engineer Procurement District were transferred to the Philadelphia Engineer District together with all personnel. Subsumed within the District, the procurement and supply organization was henceforth known as the Military Supply Division of the U. S. Engineer Office.

During 1943, contracts and purchase orders placed within the District amounted to over

\$72,000,000 and covered items from tacks to 400 KW generator sets. For the combat engineers and special battalions, over 10,000 portable gasoline driven chain-saws were shipped. These saws cut through a thirty-inch log in approximately thirty-six seconds and were used to good advantage cutting through forests in the preparation of landing fields.

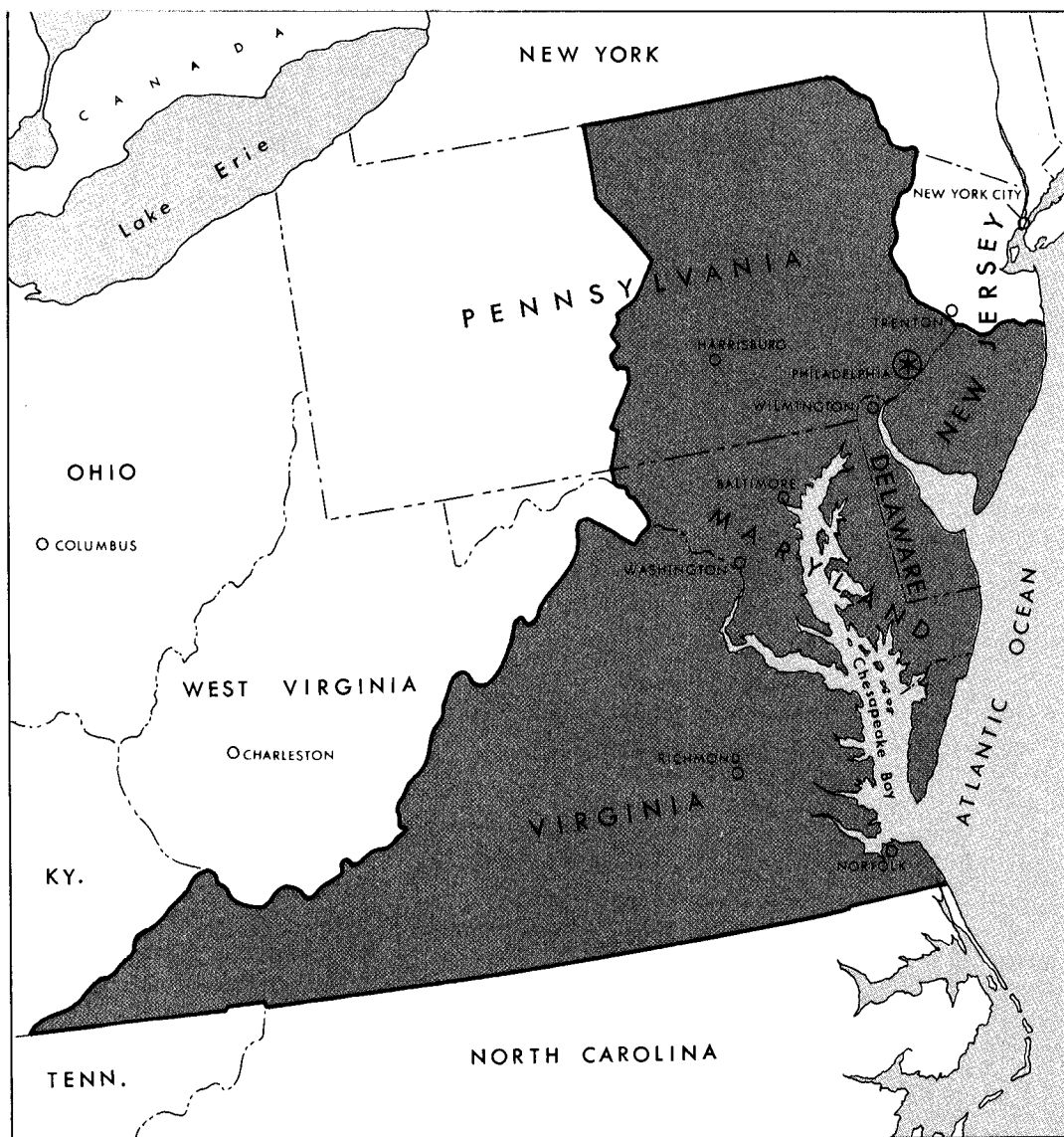
One of the most important functions of the Combat Engineers was the preparation of roads and bridges for rapid troop advancement. A Unit Construction Railroad Bridge, through and deck type, was designed by the Corps of Engineers for rapid repairs to railroad lines. This bridge had a seventy foot maximum span and could be erected and launched with approximately 1400 man hours, or in about two and three-quarter days. The contract for these bridges amounted to \$7,500,000.

Over 15,000 inflatable canvas reconnaissance boats, two and five man capacity, costing over \$1,500,000, were shipped in 1944. These boats were also used by assault troops for crossing streams. During 1944, over \$3,000,000 worth of camouflaged shrimp nets for draping over motor and armored vehicles were inspected and shipped. In order to reduce haulage of petroleum in forward areas, about 1040 miles of light weight pipe



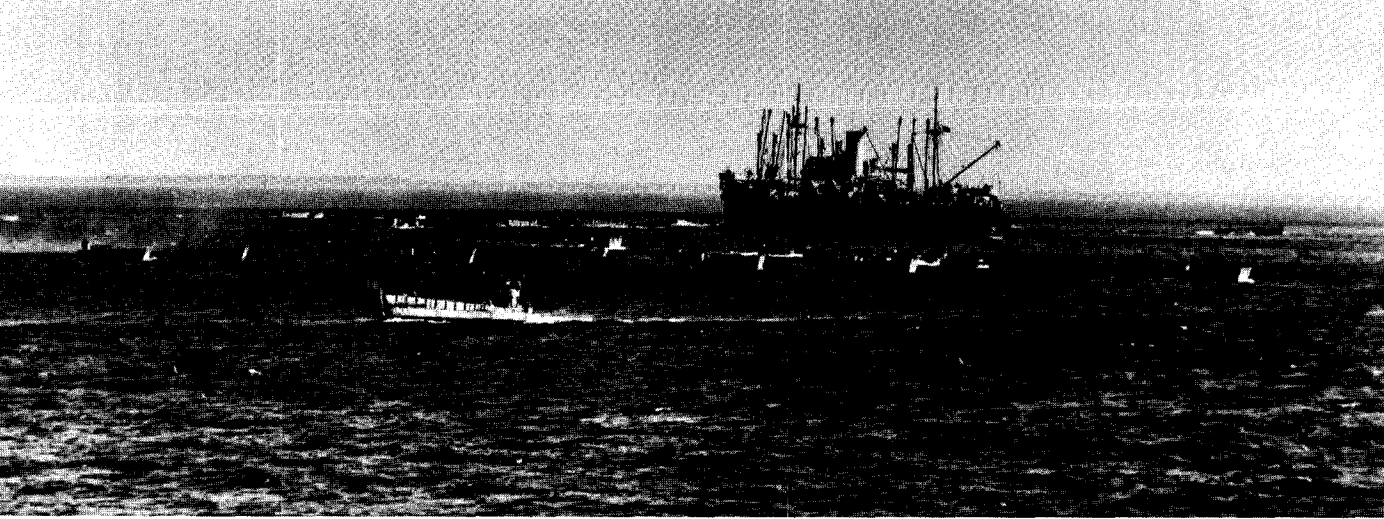
Staff officers look over 2-man canvas boat during inspection of engineer equipment at Fort Belvoir, Va.

—U.S. Army Photograph



*Territory of the Philadelphia Engineer Procurement District, 1942.*





*American supplies and landing craft, shattered by the surf of the North African beaches.*

—U.S. Army Photograph

were produced, in addition to heavier pipe supplied at the rate of forty tons per month for the same purpose. Engineers' precision drawing instruments were also shipped in quantity, together with over 170,000 compressed gas cylinders, to all points in the United States and overseas.<sup>12</sup>

Approximately 8,000 tons were shipped per month and to cover these shipments, the Traffic Section issued a monthly average of 750 Government Bills of Lading. Processing and packing materials for shipment to the various theaters of operation was an important part of Supply Division's work.



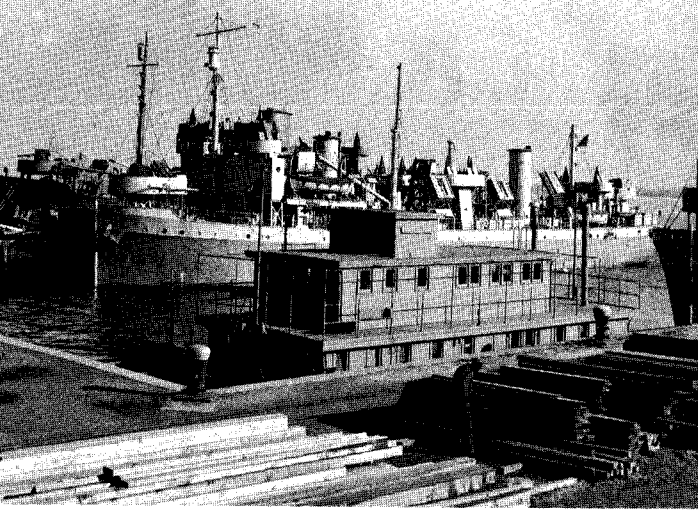
When the war started, the army envisioned an invasion of Europe through established ports, as had been the practice in World War I. This, of course, meant regular docking facilities, cranes, etc., to handle material from ships' holds to wharves or quays, and regular commercial export packing seemed adequate.

General Eisenhower's North African campaign over the beaches changed all that very quickly; lightering in open seas was resorted to and in many cases, direct flotation of crates and bales was attempted. The resultant losses of material and equipment ran as high as thirty to forty percent. Personnel from the Philadelphia Packing Section were sent to attend courses at Madison, Wisconsin. They came back and trained others and the entire group studied as they worked, in an effort which eventually speeded the final victory.<sup>13</sup>

An extensive military and civilian inspection program was also undertaken during the war, with visiting representatives and finally, on 19 May 1943, resident inspectors supervising the production of vital military supplies, at the plants producing them (e.g., pipes, camouflage, generators). Their function was to:

*report to this office diversion of deliveries contrary to schedules, probable non-receipt of components, and to advise the responsible procurement agencies, including the Office, Chief of Engineers, as soon as it appears that a schedule will not be met, with reasons therefor. In this way, it is felt that accurate basic information can be obtained for use in forecasting and controlling production.*





*The dredges Chester Harding and William T. Rossell at Fort Mifflin. December 1943. Among the dredges militarized by the Philadelphia Engineer District, these vessels were provided with 3-inch deck guns, as well as 20 mm anti-aircraft guns.*

*Production of equipment badly needed on Engineer contracts frequently is held up because of competition of other services. This matter has been observed to be particularly bad in plants where resident representatives of the other services are maintained. It frequently happens that even after materials or critical components have been secured under an AAA secured by the Corps of Engineers, the manufacturer will permit these representatives of other services to coerce him to make delivery to them.*

*It is, therefore, directed that the Division Engineers take action where required to place resident representatives in the manufacturer's plants to insure that proper deliveries of Engineer equipment are made. In general, this action will be required only in plants that produce items or components, such as engines, that are of particular importance to the Engineer Supply Program or where there are competing services.<sup>14</sup>*

Early in the war, procurement was centralized, with requisitions arriving from the Chief of Engineers' office directed to individual districts, which shipped the supplies to Engineer Depots throughout the United States, and sometimes directly overseas. Commodity purchasing of certain key items was retained throughout the war, with Chicago contracting for tractors and cranes; New York for searchlights; Pittsburgh for barrage balloons; and Philadelphia for sandbags and camouflage

nets.<sup>15</sup> Otherwise, each district bought what it needed for its own purposes, following the contracts through to completion and inspection.

The Scheduling Section scheduled supply delivery rates on a monthly basis; Property Section had to clear all government purchases from depot to port of embarkation, until the depots themselves assumed that responsibility.

In conjunction with the Marine Design Division, Military Supply procured 121 tug and towboats; 449 barges for the transportation of oil and water; 68 floating cranes of various sizes (shipped to Europe as part of the lend-lease program); five floating powerplants (30,000 K.W. each); and a number of port repair ships.<sup>16</sup> In addition, nine hopper dredges—four new and five already operating—were fully militarized at Philadelphia: that is, guns, gun crews, armor, and ordnance were installed, and the ships sent overseas to participate in combat—all survived the war.<sup>17</sup>

On 31 May 1943, pursuant to Corps of Engineers General Order No. 10, dated 10 April 1943, the procurement functions of the Philadelphia Office and accounts pertaining thereto were transferred to the North Atlantic Division Office. While the District remained actively engaged in Military Supply throughout the war, its military procurement functions ceased as of that date.

When Japan capitulated on 14 August 1945, this action automatically released cancellation orders for practically all military supply contracts. In a few days, however, many of these orders were reinstated. Since an occupation

force of four hundred thousand men was contemplated for the western occupation zone in Germany and six hundred thousand men for occupation in Japan, the normal or maintenance supply problem remained a vast one, comparing very favorably, with certain exceptions, to the entire supply problem of World War I. But contract termination did provide the major activity of the District Supply program through the end of 1945.<sup>18</sup>

In 1946, the Military Supply Division was dissolved. A skeleton force of six full-time people engaged in paper work lingered on through 1947, inspecting contracts and purchase orders; shipments; and vendors' shipping documents to a value of \$2,302,507. This force engaged in no purchasing at the time. Its secondary duties consisted of expediting shipments for other districts in the Division by telephone and personal visits to suppliers' plants. Through 1948, the items inspected and expedited included fabricated steel bridges; cement; freon gas; creosoted railroad ties and timber; electrical switch-

boards and generator sets; hose and rubber goods; and all the electric lamps used during the Nuremburg trials before the International Military Tribunal, which were flown to the Rhine/Main Airport.

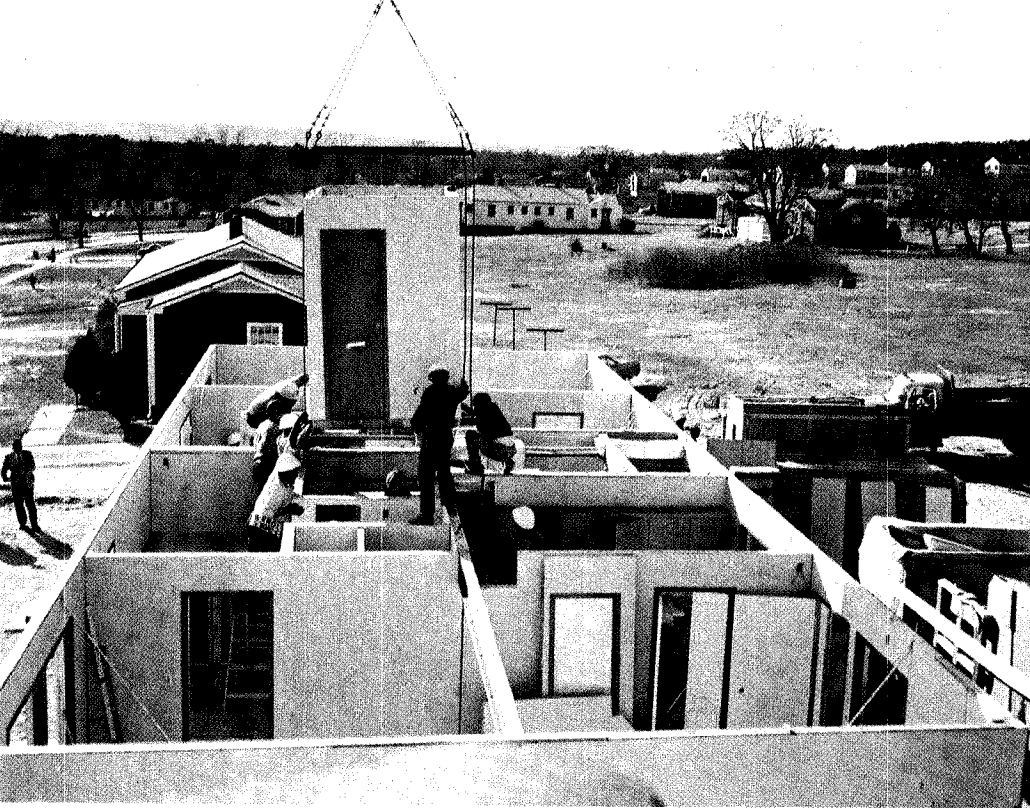
Effective 15 August 1948, a procurement office was again established in Philadelphia, "to perform certain procurement functions pertaining to Industrial and Logistical Mobilization Planning." Translated, this meant that the District was authorized to establish a list of suppliers interested in producing engineer utility items.<sup>19</sup>

The onset of the Korean Conflict in 1950 led to increased decentralization of procurement responsibilities throughout the Corps. Effective 1 October 1950 the functions of the nine engineer procurement offices, including Philadelphia, were subsumed within those District or Divisions in which they were located. By 7 December the major procurement functions of the Corps had been divided between the Central Chicago Procurement Office and the New York, Pittsburgh, Phila-



Engineer Procurement Districts, January 1951





*USAHOME — Modular second floor core being lowered into place, with all first floor panels in position. Proficient technical work crews could rapidly assemble the prefabricated coded units, on masonry foundations laid by other workers at locations throughout the world.*

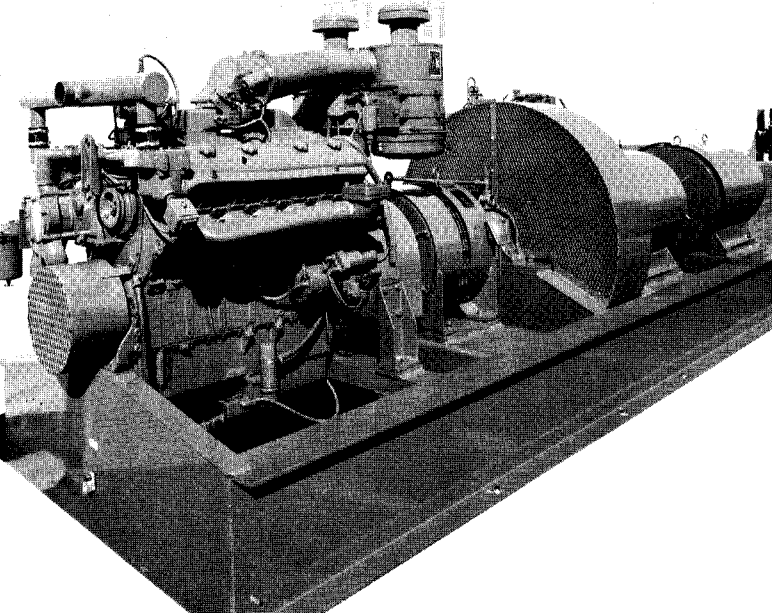
Columbus, Ohio Engineer Depot, over 5,000 manuals were produced. During the height of the program as many as 232 contracts, with a value of over \$7,000,000, were being handled at the same time; the average annual value of the program was over \$3,500,000. Begun under publications officer Edwin A. Peeples, the program later came under the authority of Samuel A. Chestnut (on Peeples' promotion to Assistant Chief of the Supply Division), under whom it remained until it was transferred to Columbus. The District, working with 20-25 technical writing houses, itself prepared procurement of the manuals, to insure compliance with the government style guide for TM-5 series (Corps of Engineers) manuals. The office then advertised, negotiated, and administered the contracts; completed manuscripts were sent to Fort Belvoir for review, and then printed by the Government Printing Office.

The Item Plant Manuals were developed to guide manufacturers and suppliers in the inspection of government equipment. They were written with such clarity and lucidity that government inspectors took to using them for inspections, rather than refer to the recondite legal language of the actual con-

tracts. Complaints were raised, and the Inspector General's Office was informed, resulting in the program's cancellation. At their height, more than twenty people worked on the manual programs.

Despite the end of the Korean conflict, the Supply Division continued to buy in support of the District's activities in both civil and military construction; contract administration; inspection of engineer-procured materials; and Industrial Mobilization Planning. Hundreds of units of both Wherry and Capehart housing were procured for District construction projects at Fort Dix and other area installations. From 1957 through the mid-1960's, the District bought more than \$100,000,000 worth of frequency converter generators, radome towers and other equipment for Nike missile sites throughout the country, on the authority of the Military Construction Directorate, OCE.

In 1963 and for five years after, the District bought \$18,000,000 worth of pre-fabricated family housing for overseas locations, under the USAHOME program, designed to "make possible the use of American-built houses at American military installations overseas to help reduce the flow of gold to foreign



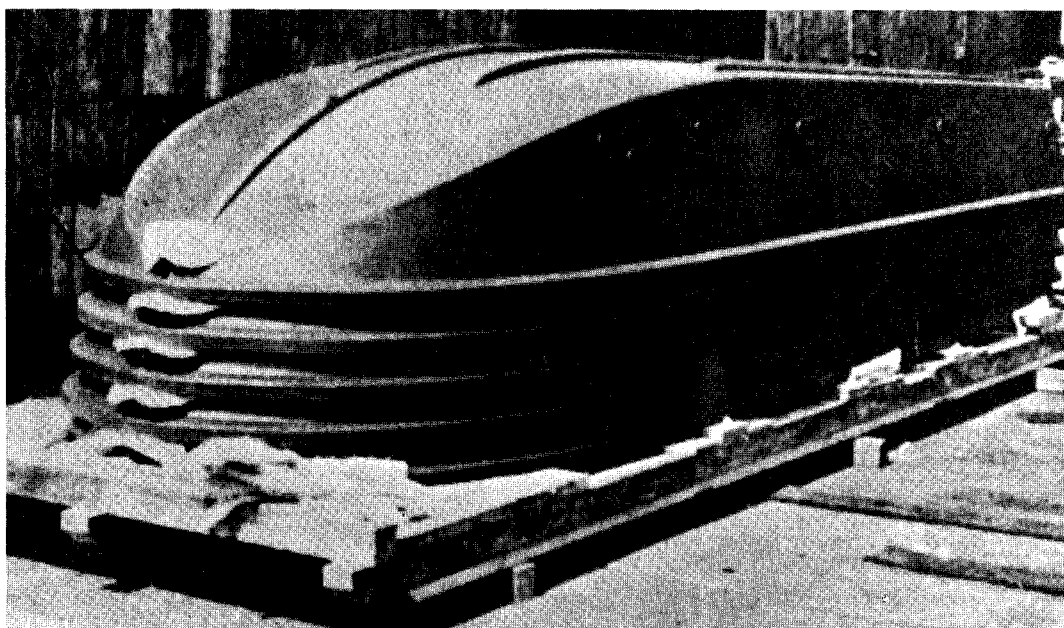
*200 K. W. uninterrupted Power Generation set with control console. Eleven units were procured and installed at five Air Force Bases within the Continental U.S., as back-up equipment to provide uninterrupted power for the Air Warning System.*

*countries.” This was a new concept in pre-fabrication—to produce, crate, and ship completed housing units with full bath and utility cores to overseas sites, to be erected on foundations prepared by others. The first procurement (1963) was of wood and gypsum board with wooden siding; in the second (1964) procurement, aluminum siding was used. The units were designed to be erected by a crew of 20 men in one working day, with two additional days required for final trim and finishing.<sup>21</sup>*

One of the four designated procurement offices for engineer troop equipment, the

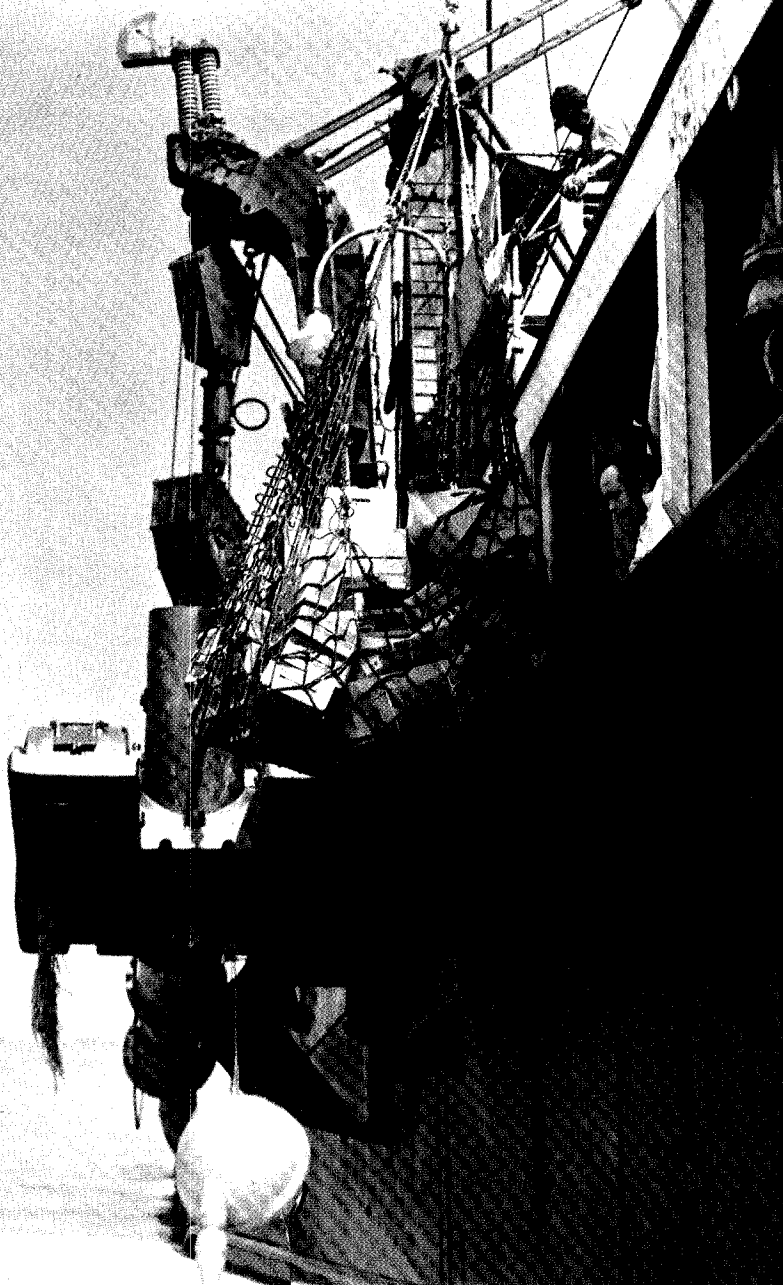
District remained on stand-by basis through the early 1960's. As Contracting Officer's Representative for the Corps' Chicago Procurement Office, the District handled some \$85,000,000 worth of contracts, including plastic assault boats, aluminum bridge components, electric generator sets, mobile electric shops, and liquid oxygen plants capable of supplying 5, 20, or 50 tons of liquid oxygen a day, in support of the Army's guided missile program.

This vast organization was administered through June 1963 by E.E. Kraus, who was succeeded in that office by Mary A. Wilson, former Chief of Procurement. Miss Wilson has



*Engineer Procurement in the 1960's included new plastic assault boats.*

*Lay-day on board the Comber.  
Every Wednesday fresh produce  
and canned goods are taken  
aboard the Comber, currently  
engaged in dredging the Delaware  
Shipping Lanes.*



continued to administer the Supply program throughout the time-frame of this history, with its cut-off date of 31 December 1971. An on-going program, it is presently limited to items in support of civil works, including all materials required by the District's dredges and field offices (oil, food, miscellaneous supplies), as well as those office supplies necessary to the normal operation of the District.

The Supply Division services the four dredges operated by the North Atlantic Division, providing them with mechanical equipment; contracting for shipyard repairs; and (in the case of the one District dredge, the

*Comber*) procuring food and supplies for the crew. Maintenance equipment and materials are supplied to area offices at District dam sites, the C & D Canal, and the Fort Mifflin Project Office. Supply Division also awards construction contracts; handles procurement for major items in Marine Design's floating plant; and acts as central procurement office for the Corps for barges, rubber dredging sleeves, flags, pennants, and insignia. Its average annual budget for the past three years has been in the vicinity of \$8,000,000. In the tradition of du Portail and his sappers, Supply will continue to provide the Corps with its proper tools.